

New Building Institute (NBI) (Email)

NBI greatly appreciates the leadership, research and development commitment from DOER in the preparation of the “MPG Rating for Commercial Buildings” white paper. This effort serves as a valuable contribution toward the challenges, methods and opportunities for building rating systems that can advance energy efficiency in the market.

Thank you for the opportunity to review and comment on this paper.

Comments

- Asset ratings should be combined with operational ratings to ensure the market considers actual energy use.
- In contrast, did you consider the economic and simplicity trade-offs of using just an Operational rating, properly normalized for occupant activity requirements, as a less costly approach?
- The Building Energy Efficiency Recommendations Report is a good concept but the cost implications of the proposed review of all buildings are significant. Consider more affordable and scalable approaches such as multi-measure tools that can provide recommendations based on pre-modeled savings by building type and age as an important compliment for some building types.
- NBI agrees with the practical recommendation to start with a small number of building types, and also to explore combining multiple type categories. *See notes below*
- The program should include financing partners to remove the barrier to capital.
- A technical scale, based on a number not a letter, should be the primary scale but in addition to, rather than instead of, a statistical scale. *See notes below*
- System-level performance indicators should be considered as a sub-section of the label.
- Promote metering and monitoring when preparing the Recommendations Report.
- The IgCC Code Change Proposal offers some models for possible reporting metrics and for calculation methodologies for building energy use and CO₂ (attached).
- Maintain the recommendation for modelers to apply the ComNet for improved modeling guidance.
- We support the use of site energy with a CO₂ metric. This will be most readily understood by the market. The utilities must consider a site-to- source conversion and the value of demand reduction strategies for their supply system. These considerations should be reflected in the program incentives for efficiency improvements.
- Greenhouse gas emissions should be a secondary metric on the label

- The pilot-phase is critical for program feedback and refinement as well as cost assessment of the proposed methods.
- Any program ‘requirements’ (for example Cx) should tie to performance outcomes. This supports the program savings and sets the stage for outcome-based codes in future policies. *See notes below.*
- Consider the path to a state-wide mandatory program with public transparency of the ratings.
- Make data fields consistent to the extent practical with other protocols.
- Ensure availability of the underlying data (with whatever level of anonymity is required) to other researchers and as part of other attempts for a consolidated data repository (DASH, DOE, etc).
- Support the California Energy Commission’s new efforts toward development of an asset rating program and policy.

NOTES

Scale:

We favor a technical scale in addition to a statistical scale. A statistical scale is useful, but a technical scale fills different needs, especially when it comes to the codes and policy world.

One of the biggest advantages of a technical scale is how it can be used to break down the policy silos. It allows code compliance, utility incentive programs, tax credits, fee-bates, disclosure, etc. to be coordinated. New policy measures like utility rate scalars, new tax incentives and/or fees, special grants or loans, even the ultimate revocation of the CO could also be coordinated with the same scale. Targets for each are then easily ratcheted down in a coordinated manner.

For a technical scale, a number is more useful than a letter ranking. The letters are not very granular, so it doesn’t tell you the difference between a high “A” and a low “A”. That lack of granularity is also a problem as we move the whole building stock forward. We might initiate a scale from A-F, but what happens when we get all or most buildings into the A and B range? Either we have to continuously recalibrate the scale, which is confusing and less useful, or eventually scrap the scale completely and start over. Another advantage of a number scale is that it can get us past ZNE. There is another “side” to zero that you really don’t get with letters. This also means that we need to seriously consider how we transition across zero. Are net producers a negative or a positive number? It would be best to decide that now, especially since there are some buildings types, like warehouses, that could be net producers in the near future.

One of the weaknesses of a statistical scale is that it only tells you how you are doing relative to other buildings. But it does not let you know how well you are doing in an absolute sense, how close to ZNE you are. It’s also a moving target as the population of buildings shifts.

The report seems to assume that ZNE is the goal for all buildings. If all buildings have to be ZNE, then all buildings will have to have on-site renewables. That would have a tremendous impact on land-use planning. It would discourage density, since it would be difficult to get the load of multiple floors served by a single solar array on the roof. It also puts the focus in renewable on buildings when in some circumstances it might be better to have renewable “power plants.”

Requirements

The recommendations seem to rely too heavily on requirements. For example, it recommends requiring Cx and RCx. However, that is no guarantee of performance. The requirement will only really be as good as the protocols it utilizes. If the Cx and RCx protocols aren’t good and comprehensive, then they won’t be successful. An alternate approach would be to establish a requirement that makes “successful” Cx and RCx a necessary precondition or step. For example, with performance standards based on actual outcomes in buildings, the buildings would need Cx and RCx that actually saved energy, not just checklists to go through. It would shift the motivation in Cx and RCx from fulfilling a requirement to saving energy, which is the real point.

Building Types

As we move toward benchmarking for very low energy building goals, we need better ways to characterize and normalize for occupant requirements (equipment loads, schedule, special conditioning and ventilation requirements). As benchmarking requirements evolve, there may be a few key parameters that emerge to be used to better characterize occupancy factors – rather than continuing to struggle with long, inconsistent, and imprecise lists of building activity types.

Thank you.

Dave Hewitt

Executive Director

New Buildings Institute

www.newbuildings.org | www.advancedbuildings.net